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EXAMINER	
GOFF II, JOHN L	

ART UNIT	PAPER NUMBER
1733	

DATE MAILED: 12/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/910,337	Applicant(s) YU ET AL.	
	Examiner John L. Goff	Art Unit 1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 September 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-15 and 17-48* is/are pending in the application.

4a) Of the above claim(s) *7,21,24 and 31-48* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1,3-6,8-15,17-20,22,23 and 25-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the amendment filed on 9/14/04.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claims 1, 3, 4, 8-11, 13-15, 17, 18, 22, 23, 25-27, 29, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapellier (FR 2730783 and see also the English abstract and English translation) in view of Scott et al. (U.S. Patent 3,646,155).

Chapellier discloses a method for forming a low-friction sealing profile for a car window or door frame, i.e. an automobile glass run channel. Chapellier discloses providing a thermoset elastomer rubber, providing a crosslinkable thermoplastic consisting essentially of polyethylene, extruding the thermoset elastomer rubber to form a main body member, extruding the crosslinkable thermoplastic to form an abrasion resistant layer/tape having a thickness of 0.004-

0.016 inches, contacting the abrasion resistant layer with the main body member, laminating the abrasion resistant layer with the main body member by pressing with a lamination wheel, and then curing/vulcanizing the main body member and crosslinking the abrasion resistant layer to form the sealing profile (See English abstract and Figures 1-3 and Page 2, lines 5-6 and 25-26 and Page 3, lines 25-26 and Page 4, lines 7-18 of the English translation). Chapellier is silent as to using as the abrasion resistant layer a silane grafted crosslinkable polyethylene that is crosslinked in a steam bath, it being noted Chapellier teaches using as the abrasion resistant layer a crosslinkable polyethylene that is crosslinked after curing of the main body member by any means (See 17 of Figure 3 and Page 4, lines 17-18 of the English translation). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the crosslinkable polyethylene taught by Chapellier any well known and conventional crosslinkable polyethylene such as a silane grafted crosslinkable polyethylene that is moisture crosslinkable in for example a steam bath as shown for example by Scott et al. as this was a known crosslinkable polyethylene used in the extrusion art that is crosslinked under less critical process conditions, i.e.. less critical control of the process variables regarding crosslinking, than those which are normally present in conventional crosslinking techniques.

Scott et al. disclose a technique for crosslinking polyolefins such as polyethylene following an extrusion process wherein less critical crosslinking conditions, i.e. less critical control of the process variables regarding crosslinking, are required than those which are normally present in conventional crosslinking techniques, e.g. peroxide crosslinking, by moisture crosslinking, e.g. in a steam bath (at temperatures above 100 °C), the polyethylene with a silane

reactant (Column 1, lines 22-37 and 54-61 and Column 3, lines 50-51 and 74-75 and Column 4, lines 1-11 and Column 5, lines 14-26).

Regarding claims 9 and 23, Chapellier appears to teach co-extruding the main body member and abrasion resistant layer through a common device (See 12 of Figure 3 and Page 4, lines 13-14 of the English translation) such that the limitation is met. However, in the event it is considered Chapellier does not specifically teach using a common extrusion device/die, it would have been obvious to one of ordinary skill in the art at the time the invention was made to perform co-extrusion of the main body member and abrasion resistant layer as taught by Chapellier as modified by Scott et al. using any well known and conventional device such as through a common die as only the expected results would be achieved.

5. Claims 5, 6, 12, 19, 20, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapellier and Scott et al. as applied to claims 1, 3, 4, 8-11, 13-15, 17, 18, 22, 23, 25-27, 29, and 30 above, and further in view of either one of Edwards (5,183,613) or Cook (U.S. Patent 5,415,822).

Regarding claims 5, 6, 19, and 20, Chapellier and Scott et al. as applied above teach all of the limitations in claims 5, 6, 19, and 20 except for a teaching as to the specific times and temperatures for extruding the main body member, extruding the crosslinkable thermoplastic, and curing the main body member, it being noted Chapellier and Scott et al. are not limited to any particular times or temperatures. It would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine/optimize the process time and temperature variables for the main body member and crosslinkable thermoplastic taught by Chapellier as modified by Scott et al. as a function of the particular main body member material

used, crosslinkable thermoplastic material used, etc. as doing so would have required nothing more than ordinary skill and routine experimentation with it being further noted Edwards is exemplary of extruding the main body, e.g. rubber, member at a temperature of 60-150 °C and extruding the abrasion resistant layer at a temperature greater than 200 °C while Cook is exemplary of extruding the main body member, e.g. rubber, at a temperature of 80-150 °C, curing the main body member at a temperature of 180-250 °C, and extruding the abrasion resistant thermoplastic layer, e.g. comprising crosslinkable polyethylene, at temperatures of 140-250 °C.

Regarding claims 12 and 28, Chapellier and Scott et al. as applied above teach all of the limitations in claims 12 and 28 except for a teaching as to the specific rubber of the main body member, it being noted Chapellier and Scott et al. are not limited to any particular rubber material. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the rubber elastomer of the main body member taught by Chapellier as modified by Scott et al. ethylene-propylene-diene terpolymer rubber (EPDM) as it was well known and conventional in the art when forming a sealing profile for a car window or door frame to use EPDM to form a sealing profile that is flexible and has good weatherability properties as shown for example by either one of Edwards or Cook.

Edwards is directed to a process for forming a glass run channel for use in an automotive application. Edwards teaches a composite extrusion comprising a channel member made of thermoset elastomer such as EPDM and an abrasion resistant layer made of thermoplastic material such as a polyolefin. Edwards teaches using EPDM forms a glass run channel that is flexible and has good weatherability properties. Edwards teaches forming the composite

extrusion by co-extruding the channel member (at a temperature of 60-150 °C) and abrasion resistant layer (at a temperature greater than 200 °C) such that the abrasion resistant layer contacts the channel member forming a 0.2 to 0.4 mm abrasion resistant layer on the channel member. Edwards then teaches curing the channel member to form the glass run channel (Figure 1 and Column 1, lines 9-14 and Column 6, lines 35-61 and Column 8, lines 36-44 and Column 9, lines 11-14 and Column 11, lines 24-33 and 45-51 and Column 12, lines 1-8 and 12-15).

Cook is directed to manufacturing composite extrusions for use as glass run channels. Cook teaches a composite extrusion comprising a main body member made of thermoset material such as EPDM and an abrasion resistant layer made of thermoplastic material such as polyolefin (e.g. polyethylene) which can be crosslinked by peroxides, moisture, UV, and other systems. Cook teaches the abrasion resistant layer may comprise additional components other than polyolefin. However, the primary material of the abrasion resistant layer is polyolefin such that the abrasion resistant layer taught by Cook comprises "essentially" polyolefin. Cook teaches forming the composite extrusion by extruding the main body member (at a temperature of 80-150 °C), curing the main body member (at a temperature of 180-250 °C), and extruding on top of the main body member the abrasion resistant layer (at a temperature greater than 140-250 °C) such that the main body member and abrasion resistant layer form a bonded composite (Figure 1 and Column 1, lines 8-14 and Column 4, lines 15-24, 30-34, and 37-40 and Column 5, lines 7-36).

6. Claims 1, 3-6, 8-15, 17-20, 22, 23, and 25-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Edwards in view of either one of Chapellier or Cook and Scott et al.

Edwards is described above in full detail. Edwards is silent as to a specific recitation for using as the abrasion resistant layer a crosslinkable polyolefin. However, Edwards is directed to using general polyolefins known to one in the art, and Edwards is not limited to any particular, i.e. crosslinkable or non-crosslinkable, polyolefin. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the polyolefin taught by Edwards any well known and conventional polyolefin such as a crosslinkable polyolefin to form a low-friction abrasion resistant layer as was well known in the art as shown for example by either one of Chapellier or Cook as only the expected results would be achieved. Chapellier and Cook are described above in full detail. Edwards and Chapellier or Cook are silent as to using in particular silane grafted crosslinkable polyethylene that is crosslinked in a steam bath as the crosslinkable polyethylene, it being noted Chapellier teaches using as the abrasion resistant layer a crosslinkable polyethylene (crosslinked by no particular means) and Cook teaches using a moisture crosslinkable polyethylene. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the crosslinkable polyethylene taught by Edwards as modified by either one of Chapellier or Cook any well known and conventional crosslinkable polyethylene such as a silane grafted crosslinkable polyethylene that is moisture crosslinkable in for example a steam bath as shown for example by Scott et al. as this was a known crosslinkable polyethylene used in the extrusion art that is crosslinked under less critical process conditions, i.e. less critical control of the process variables regarding crosslinking, than those which are normally present in conventional crosslinking techniques, e.g. peroxide.

Regarding claims 5, 6, 19, and 20, it is noted Edwards is silent as to specific temperatures for extruding the crosslinkable thermoplastic and times and temperatures for curing the main body member. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine/optimize the extrusion temperature of the crosslinkable thermoplastic taught by Edwards as modified by either one of Chapellier or Cook and Scott et al. as a function of the particular main body member material used, crosslinkable thermoplastic material used, etc. as doing so would have required nothing more than ordinary skill and routine experimentation with it being further noted Edwards teaches extruding the main body member at a temperature of 60-150 °C and extruding the abrasion resistant layer at a temperature greater than 200 °C while Cook teaches extruding the main body member at a temperature of 80-150 °C, curing the main body member at a temperature of 180-250 °C, and extruding the abrasion resistant thermoplastic layer, e.g. comprising crosslinkable polyethylene, at temperatures of 140-250 °C.

Regarding claims 8 and 22, it is noted that Edwards teaches the abrasion resistant layer is co-extruded along with the channel member and the two layers are contacted directly after extrusion, i.e. Edwards teaches the extruded abrasion resistant layer contacts the uncured channel member (Column 11, lines 24-33), such that it would have been obvious to one of ordinary skill in the art at the time the invention was made that the modification of Edwards with the crosslinkable abrasion resistant layer taught by either one of Chapellier or Cook would create a process wherein the abrasion resistant layer is crosslinked after contacting the channel member because (1) the two layers are co-extruded, i.e. the abrasion resistant layer could not be extruded if it were already crosslinked and (2) the layers are contacted directly after extrusion, it being

noted this arrangement is further shown by Chapellier wherein crosslinking of the abrasion resistant layer does not occur until after contacting with the main body member.

Regarding claims 9 and 23, it is noted Edwards teaches co-extrusion occurs using "any suitable extrusion apparatus in a conventional manner as is well know in the art and literature" such that it would have been obvious to one of ordinary skill in the art at the time the invention was made that conventional co-extrusion taught by Edwards would include co-extrusion through a common, conventional extrusion die as only the expected results would be achieved.

Regarding claims 11 and 27, Edwards does not specify any particular apparatus for laminating/contacting the abrasion resistant layer and channel member such that it would have been obvious to one of ordinary skill in the art at the time the invention was made to laminate/contact them in any well known and conventional manner such as by pressing with lamination wheels as was known in the art as shown for example by Chapellier wherein only the expected results would be achieved.

Claim Rejections - 35 USC § 112

7. Claims 1, 2-6, and 8-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 requires "providing a crosslinkable thermoplastic consisting essentially of polyolefin". It is unclear where in the specification the crosslinkable thermoplastic is described as "consisting essentially of polyolefin". It is noted the specification does disclose

the crosslinkable thermoplastic as "comprising a polyolefin" (Page 3, lines 21-22). However, "comprising" is inclusive or open-ended and does not exclude additional, unrecited elements or method steps whereas "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" (See MPEP 2111.03). It is unclear where in the specification it is suggested the crosslinkable thermoplastic may include materials that do not affect its basic and novel characteristics, e.g. additives, contaminants, etc., such that there is no support in the specification to claim, "consisting essentially of".

8. Claims 1, 2-6, and 8-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "consisting essentially of" in claim 1 is a relative term which renders the claim indefinite. The term "consisting essentially of" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Claim 1 requires "providing a crosslinkable thermoplastic consisting essentially of polyolefin". It is unclear what is required by the term "consisting essentially of". Specifically, the specification does not disclose including any additional materials such as additives or contaminants that could be used in the crosslinkable thermoplastic that do not materially affect the basic and novel characteristics of the crosslinkable thermoplastic.

Response to Arguments

9. Applicant's arguments with respect to claims 1, 3-6, 8-15, 17-20, 22, 23, and 25-30 have been considered but are moot in view of the new ground(s) of rejection.

Regarding applicants arguments to the 35 U.S.C. 112 first and second paragraph rejections, it is noted these arguments were addressed in previous office actions. Furthermore, regarding the first paragraph rejection while applicants argue an almost limitless number of contaminants and additives may be included, there is no disclosure in the specification of including a single additional component within the crosslinkable thermoplastic. Additionally, regarding the second paragraph rejection it is noted for the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" is construed as equivalent to "comprising" (See MPEP 2111.03). However, claim 15 is the same as claim 1 absent the "consisting essentially of" language such that it is unclear how claim 1 should be interpreted, other than as a duplicate of claim 15, there being no clear indication in the specification of what is required by "consisting essentially of".

Regarding applicants arguments to Chapellier, it is noted it is not improper to cite the abstract of Chapellier in a non-final office action (See the last paragraph of MPEP 706.02 cited by applicants), it being noted a full English translation is attached to this office action.

Regarding applicants arguments to Scott et al., it is noted Scott et al. clearly teach a crosslinkable polyethylene, e.g. moisture crosslinked, used in the extrusion art that is crosslinked under less critical process conditions, e.g. **less critical control of the process variables**

regarding crosslinking, than those which are normally present in conventional crosslinking techniques (Column 1, lines 22-37 and 54-61).

Regarding applicants arguments that there is no motivation to combine Edwards and either one of Chapellier or Cook, it is noted these arguments were addressed in the previous office action. Furthermore, as to applicants argument that "To one skilled in the art, the use of the term "polyolefin" denotes a conventional uncrosslinked polyolefin" it is noted this statement is unsupported by evidence such as an affidavit or declaration, and Chapellier and Cook are both exemplary of the use of a crosslinkable thermoplastic polyolefin within the same art as Edwards for the same abrasion resistant layer such that clearly one skilled in the art would not limit the use of the term "polyolefin" to only uncrosslinked polyolefin. As to applicants arguments that "A crosslinked polyolefin would take on at least some characteristics of a thermoset", it is noted there is no requirement in Edwards that the abrasion resistant layer after its application remain melt flowable, i.e. thermoplastic, such that the use of a crosslinkable thermoplastic is clearly not precluded. As to applicants arguments that "Here, that is exactly what the Examiner is proposing – changing the principle of operation of the references in an attempt to meet the recitations of the present claims" it is noted the principle of operation of Edwards is unchanged by the rejection in that there is no requirement in Cook that if the abrasion resistant layer comprises a crosslinkable thermoplastic the main body member must be cured prior to contacting the abrasion resistant layer. As to applicants arguments that "That is, Edwards discloses that the polyolefin coating is substantially melted when adhered to the elastomer substrate" it is noted Edwards merely requires the abrasion resistant layer to be melted, e.g. extruded, during it application, and does not require the abrasion resistant layer to retain melt flowable properties after is application. As

to applicants arguments that "First, a crosslinked abrasion resistant layer could be extruded if the degree of crosslinking was not extensive" it is noted the crosslinking taught by Chapellier and Cook is not merely light crosslinking to a non-extensive extent such that this argument is not persuasive. As to applicants arguments that "That is, while a heavily crosslinked polymer will not remelt once is solidifies, it may be processed (e.g. extruded) while still in its molten state" it is noted this argument is not persuasive because neither Chapellier nor Cook suggest crosslinking before extrusion while the crosslinkable thermoplastic is in a melt state. As to applicants arguments that "With regard to Examiners point (2), nowhere does Edwards or Cook require that the layers by contacted immediately after extrusion with no intervening steps" it is noted applicants further state "Edwards teaches contacting of the layers directly after co-extrusion", and thus, in view of co-extruding the abrasion resistant layer directly onto the main body member it is clear crosslinking would occur subsequent to the co-extrusion.

Finally, regarding applicants arguments as to when the crosslinking would occur in Edwards as modified by Chapellier or Cook in addition to the above, it is noted Chapellier shows a method substantially the same as that of Edwards wherein during the use of a crosslinkable thermoplastic abrasion resistant layer crosslinking of the abrasion resistant layer (and curing of the main body member) does not occur until after contacting with the main body member.

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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